

No. 24-1721

**In the United States Court of Appeals
for the Eighth Circuit**

STATE OF IOWA, et al.,

Petitioners,

v.

JENNIFER GRANHOLM, et al.,

Respondents.

On Petition for Review of a Rule of the Department of Energy

OPENING BRIEF OF PETITIONERS

MICHAEL BUSCHBACHER

Counsel of Record

R. TRENT MCCOTTER

JAMES R. CONDE

LAURA B. RUPPALT

BOYDEN GRAY PLLC

801 17th Street NW, #350

Washington, DC 20006

(202) 955-0620

mbuschbacher@boydengray.com

BRENNA BIRD

Iowa Attorney General

ERIC H. WESSAN

Solicitor General

PATRICK VALENCIA

Deputy Solicitor General

1305 E. Walnut Street

Des Moines, Iowa 50319

(515) 823-9117

eric.wessan@ag.iowa.gov

*Counsel for the American Free
Enterprise Chamber of
Commerce*

Counsel for State of Iowa

(Additional counsel listed after signature block)

SUMMARY AND REQUEST FOR ARGUMENT

This case is about one of the most important numbers no one has ever heard about: the petroleum-equivalency factor. This number determines how the efficiency of electric cars is measured in the Nation's fuel economy program, and how it compares to the efficiency of gasoline cars. Congress entrusted the Department of Energy ("DOE") with the duty of determining these gasoline "equivalent" values for electric cars. 49 U.S.C. § 32904(a)(2)(B).

DOE has betrayed this trust. Instead of using "equivalent" values, DOE arbitrarily multiplies the efficiency of electric cars by nearly seven. DOE has conceded this multiplier has "no basis" in law. But after automobile manufacturers told DOE that following the law would interfere with the Administration's quest to make everyone buy electric, DOE decided to keep the arbitrary multiplier for several years anyway. Along the way, DOE committed numerous other legal errors. DOE's rule seriously distorts incentives. It will cause manufacturers to overinvest in electric cars, underinvest in alternatives, such as hybrids, and reduce real average fuel economy, all in defiance of the statute's text and purpose. Oral argument is warranted.

CORPORATE DISCLOSURE STATEMENT

Pursuant to Fed. R. App. P. 26.1, the undersigned counsel certifies as follows:

Petitioner American Free Enterprise Chamber of Commerce (“AmFree”) is a non-profit, tax-exempt entity organized in the manner allowed by Section 501(c)(6) of the Internal Revenue Code. AmFree has no parent corporation, and no publicly held company has 10% or greater ownership in AmFree.

May 29, 2024

/s/ Michael Buschbacher
Michael Buschbacher

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JURISDICTIONAL STATEMENT

The Court has subject-matter jurisdiction because DOE’s petroleum-equivalency determination is “a regulation prescribed in carrying out” section 32904 of Title 49. *See* 49 U.S.C. §§ 32904(a)(2)(B), 32909(a)(1); 89 Fed. Reg. 22,041 (Mar. 29, 2024), Add.1.

STATEMENT OF THE ISSUES

I. Whether DOE may arbitrarily multiply the gasoline-equivalent efficiency of electric automobiles by nearly seven through a fuel-content factor that does not discernably compare the “relative scarcity and value” of electricity fuels and gasoline, as the statute requires. 49 U.S.C. § 32904(a)(2)(B); *West Virginia v. EPA*, 597 U.S. 697 (2022); *ETSI Pipeline Project v. Missouri*, 484 U.S. 495 (1988); *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983) (“*State Farm*”); *see also Sorenson Commc’ns Inc. v. FCC*, 755 F.3d 702 (D.C. Cir. 2014).

II. Whether DOE’s novel “cumulative” methodology for determining the gasoline-equivalent energy of electricity was lawful, reasonable, and made available for public comment. 5 U.S.C. § 553; 49 U.S.C. § 32904(a)(2)(B)(ii); *State Farm*, 463 U.S. 29; *Citizens Telecomms. Co. of*

Minn. v. FCC, 901 F.3d 991 (8th Cir. 2018); *see also Owner-Operator Indep. Drivers Ass’n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 201 (D.C. Cir. 2007).

III. Whether DOE’s petroleum-equivalent determination is otherwise arbitrary and capricious or not in observance of proper procedure because:

A. DOE failed to account for the substantial energy losses of charging an electric automobile and ignored comments flagging the problem. *State Farm*, 463 U.S. 29.

B. DOE justified its conclusion that electric automobiles are driven the same number of miles as gasoline automobiles by relying on studies that weren’t disclosed for public comment and that are manifestly unrepresentative because they survey only households that own at least one electric automobile. *Citizens Telecomms.*, 901 F.3d 991; *State Farm*, 463 U.S. 29.

C. DOE failed to adequately explain why the two-cycle test procedure “ensure[s] a level playing field” even though the test is biased in favor of electric automobiles. 49 U.S.C. § 32904(a)(2)(B)(i); *State Farm*, 463 U.S. 29.

STATEMENT OF THE CASE

I. STATUTORY AND REGULATORY BACKGROUND

A. The Motor Vehicle Act

In the wake of the 1973–74 Arab oil embargo, Congress enacted the Energy Policy and Conservation Act of 1975 to, among other things, “provide for improved energy efficiency of motor vehicles.” 42 U.S.C. § 6201(5).

To that end, the law amended the Motor Vehicle Information and Cost Savings Act (the “Motor Vehicle Act”) to add Title V. Pub L. No. 94-163, § 301, 89 Stat. 901 (1975), *codified at* 49 U.S.C. Ch. 329.¹ Title V of the Motor Vehicle Act promotes energy efficiency by requiring gradual increases in the “fuel economy” of new automobiles, 49 U.S.C. § 32902(a)–(b), where “fuel economy” is defined as “the average number of miles traveled by an automobile for each gallon of gasoline” or diesel used to propel an automobile. *Id.* § 32901(a)(10)–(11). The Secretary of Transportation has delegated his duty to administer this program to the Administrator

¹ Before 1994, Title V of the Motor Vehicle Act was codified at 15 U.S.C. § 2001 *et seq.*

of the National Highway Traffic and Safety Administration (“NHTSA”).
49 C.F.R. § 1.95(a).

The law works like this. “At least 18 months before the beginning of each model year,” NHTSA must “prescribe by regulation average fuel economy standards for automobiles manufactured by a manufacturer in that model year.” 49 U.S.C. § 32902(a). A “standard” must “be the maximum feasible average fuel economy level that ... manufacturers can achieve in that model year.” *Id.* NHTSA must set separate standards for “passenger automobiles” (e.g., sedans, coupes, hatchbacks), and “non-passenger automobiles,” also known as “light trucks” (e.g., light pickups, minivans, and sport-utility vehicles). *Id.* § 32902(b); 49 C.F.R §§ 523.4, 523.5, 531.5, 533.

Paragraph (f) of section 32902 tells NHTSA what it “shall consider” when setting a “maximum feasible” standard: “technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy.” 49 U.S.C. § 32902(f). Paragraph (h) tells NHTSA what it “may *not* consider”: the efficiency of “dedicated” or “dual fueled” automobiles operating on “alternative fuel,” such as automobiles powered by

electricity, or credits earned by manufacturers for exceeding the standards. *See id.* §§ 32901(a)(1)–(2), (8)–(9), 32902(h). Electric automobiles, like credits, are thus an optional compliance flexibility for manufacturers.

Although NHTSA prescribes the standards, the Environmental Protection Agency (“EPA”) must “calculate the average fuel economy of [each] manufacturer.” 49 U.S.C. § 32904(a). To do so, EPA promulgates test procedures to measure an automobile’s fuel economy in miles per gallon (“mpg”). *Id.* § 32904(c). Since the program’s inception, EPA has tested gasoline automobiles using two drive cycles intended to emulate city and highway driving. 87 Fed. Reg. 25,710, 25,765 n.123 (May 2, 2022). Once the results are in, EPA determines the “average fuel economy” of each manufacturer’s fleet and reports its “measurements and calculations” to NHTSA. 49 U.S.C. § 32904(a), (e); *see, e.g.*, 49 C.F.R. pt. 531, App’x A, Fig. 2 (example).

NHTSA then compares a manufacturer’s average fuel economy to the standard applicable to the fleet. 49 C.F.R. § 531.6 & pt. 531, App’x A, Fig. 1 (example). A manufacturer that exceeds the average standard “earns credits.” 49 U.S.C. § 32903(a), (c). A manufacturer that falls short

of the standard, after considering credits, pays “civil penalties.” *Id.* §§ 32911(b), 32912(b); 49 C.F.R. § 578.6(h)(2), *see also Nat. Res. Def. Council v. NHTSA*, 894 F.3d 95, 101 (2d Cir. 2018). The fuel economy standards thus encourage manufacturers to make automobiles with high fuel economy compliance values, and discourage them from making automobiles with low fuel economy compliance values. *Ctr. for Auto Safety v. NHTSA*, 793 F.2d 1322, 1324, 1332–33 (D.C. Cir. 1986); Graham Decl. ¶¶ 9–10, Add.21–22.

B. The Petroleum-Equivalency Determination for Model Years 1981-1987

In 1980, Congress amended the Motor Vehicle Act to require EPA to include electric automobiles when calculating a manufacturer’s average fuel economy as part of a seven-year pilot program. Chrysler Corporation Loan Guarantee Act of 1979, Pub. L. No. 96-185, § 18, 93 Stat. 1324, 1336 (Jan. 7, 1980); *see* 125 Cong. Rec. 37083 (1979) (statement of Sen. McClure) (adding amendment). Electric automobiles, however, don’t burn “fuel,” so they don’t have a “fuel economy” as that term is defined in the statute. 49 U.S.C. § 32901(a)(10)–(11). Instead, electric automobiles use electrical energy stored in a portable battery. *See id.* § 32904(a)(2)(A)

(defining “electric vehicle”). Amounts of electrical energy are measured in watt-hours (“Wh”), not gallons.

To include electric automobiles, Congress directed DOE to “determine” “*equivalent* petroleum based fuel economy values ... for various classes of electric vehicles,” *id.* § 32904(a)(2)(B) (emphasis added). DOE “shall review those values each year and determine and propose necessary revisions based on the following factors:

- (i) the approximate electrical energy efficiency of the vehicle, considering the kind of vehicle and the mission and weight of the vehicle.
- (ii) the national average electrical generation and transmission efficiencies.
- (iii) the need of the United States to conserve all forms of energy and the relative scarcity and value to the United States of all fuel used to generate electricity.
- (iv) the specific patterns of use of electric vehicles compared to petroleum-fueled vehicles.”

Id.

In 1981, DOE promulgated a final petroleum-equivalency determination for model years 1981 through 1987. *See* 46 Fed. Reg. 22,747 (Apr. 21, 1981). This determination included two core components: a test cycle to measure the “efficiency of the vehicle,” and a “petroleum-equivalency

factor” to account for the three remaining statutory considerations. *Id.* at 24,752–53.

By 1987, however, the pilot program had failed: “No electric vehicles [were] offered for sale” during that period. DOE, *Electric and Hybrid Vehicles Program* 31 (Mar. 1988), <https://www.osti.gov/servlets/purl/5003053>.

C. Alternative Motor Fuels Legislation

Congress focused its efforts instead on encouraging other alternative fuels. In the Alternative Motor Fuels Act of 1988, Congress promoted “the development and widespread use of methanol, ethanol, and natural gas as transportation fuels by consumers,” and “motor vehicles” powered by these fuels. Pub. L. No. 100-494, § 3, 102 Stat. 2441, 2442. The Act, in part, amended the Motor Vehicle Act to add “incentives” for manufacturers that make automobiles that run on these fuels. *See* 15 U.S.C. § 2013(a), (c) (1988).

In 1992 Congress extended these “incentives” to other alternative fuels, but not to electricity. Pub. L. No. 102-486, § 403, 102 Stat. 2776, 2876. Section 32905 of Title 49 provides:

Except as provided in ... *section 32904(a)(2) of this title* [relating to electric automobiles], for any model of dedicated auto-

mobile manufactured by a manufacturer after model year 1992, the fuel economy measured for that model shall be based on the fuel content of the alternative fuel used to operate the automobile.

49 U.S.C. § 32905(a) (emphasis added). Congress thus instructed EPA to measure the efficiency of alternative-fueled automobiles based on the alternative “fuel content” of the fuel, “[e]xcept” for electric automobiles, which remained subject to the petroleum-equivalency determination in section 32904(a)(2).

Section 32905 goes on to prescribe a specific fuel-content factor that EPA must use for automobiles that run on liquid alternative fuel (e.g., E85) or natural gas. Specifically, “a gallon of ... *liquid* alternative fuel,” and a “gallon equivalent of *gaseous* fuel,” must be “deemed” by EPA to contain only “.15 gallon of fuel” when calculating average fuel economy. *Id.* § 32905(a), (c) (emphases added). In other words, EPA must divide the fuel economy of these automobiles by 0.15—equivalent to multiplying their fuel economy by nearly seven. The value of this fuel-content factor comes from the labels used to market ethanol and methanol fuels, E85 and M85, which nominally contain 15% petroleum fuel. *See* 88 Fed. Reg. 21,525, 21,528 & n.6 (Apr. 11, 2023), App.7. Applying the 0.15 divisor to natural gas was an arbitrary political compromise.

D. The Petroleum-Equivalency Determination for Model Years 2000 and Later

Beginning in the late 1990s, California sought to compel manufacturers to make electric automobiles. *Am. Auto. Mfrs. Ass’n v. Mass. Dep’t of Env’t Prot.*, 163 F.3d 74, 78–79 (1st Cir. 1998). In response, automobile manufacturers urged DOE to promulgate a new petroleum-equivalency determination “at the earliest possible time.” 65 Fed. Reg. 36,986, 36,988 (June 12, 2000).

DOE obliged in 2000. DOE analyzed the statutory factors as follows:

(i) *Approximate efficiency.* DOE must consider “the approximate electrical energy efficiency of the vehicle.” 49 U.S.C. § 32904(a)(2)(B)(i). Instead of requiring tests specific to an electric automobile, DOE required measuring the efficiency of an electric automobile using the same two-cycle test procedure used for a gasoline automobile. 65 Fed. Reg. at 36,990, 36,992.

(ii) *Electricity generation and transmission efficiency.* Electric automobiles are usually more efficient than gasoline automobiles because they don’t combust fuel on board. But the useful energy lost when generating electricity to charge an electric-automobile battery offsets

much of the gain, as the “burning of fuels to produce work is the least efficient step” in both the electricity and gasoline fuel cycles. 65 Fed. Reg. at 36,987. The “difference is that a gasoline vehicle burns its fuel on-board the vehicle, and an electric vehicle burns its fuel ... off-board the vehicle,” at a power plant. *Id.* To compare the fuels on an equivalent basis, DOE must therefore consider the useful energy lost before electricity ever reaches a vehicle battery, that is, “the national average electrical generation and transmission efficiencies.” 49 U.S.C. § 32904(a)(2)(B)(ii).

DOE did so. DOE (1) determined the efficiency of electricity, (2) compared this to the efficiency of producing and distributing gasoline, and (3) multiplied the results by the watt-hours of energy in a gallon of gasoline (33,705 Wh) to convert the result to gallons. 65 Fed. Reg. at 36,987. Through this straightforward math, DOE derived a “gasoline-equivalent energy content of electricity,” or “E_g,” of 12,307 watt-hours per gallon (“Wh/gal”). *Id.*; *see also* 89 Fed. Reg. at 22,044–45, Add.4–5 (explaining the calculation). This compares the efficiency of electricity and gasoline on an apples-to-apples basis.

(iii) Energy conservation and relative scarcity. DOE must consider “the need of the United States to conserve all forms of energy and

the relative scarcity and value to the United States of all fuel used to generate electricity.” 49 U.S.C. § 32904(a)(2)(B)(iii). After careful analysis and comments, DOE concluded that fossil fuels “are abundant” and so “relative scarcity” should not be a “guiding factor” going forward. 65 Fed. Reg. at 36,988.

(iv) *Patterns of use.* DOE must “compare” “the specific patterns of use of electric vehicles ... to petroleum-fueled vehicles.” 49 U.S.C. § 32904(a)(2)(B)(iv). The reason is that a “petroleum-fueled vehicle has a greater number of vehicle miles travelled annually than the electric vehicle due to the limited range restriction of electric vehicles.” 45 Fed. Reg. 34,008, 34,012 (May 21, 1980). If an electric automobile is not driven as much as a gasoline automobile, it doesn’t conserve as much energy over its life.

Despite electric automobiles’ “shorter range and longer ‘refueling’ times,” DOE asserted that electric automobiles could “offer capabilities (perhaps excepting driving range) similar to those of conventional vehicles,” and assumed they would be driven the same number of annual miles. 65 Fed. Reg. at 36,987.

(v) *Fuel-content factor.* To the statutory factors, DOE added another of its own making. DOE decided to “reward” electric automobiles by using a “fuel-content factor” of 1/0.15, equivalent to inflating gasoline-equivalent energy from 12,307 to 82,049 Wh/gal, or 666%. *Id.* at 36,987–88. DOE applied this fuel-content factor to provide electricity with “similar treatment” to Congress’s treatment of ethanol and natural gas. *Id.* DOE never explained how its *similar* treatment was consistent with Congress’s *different* treatment of electric automobiles in the statute. 49 U.S.C. § 32905(a).

* * *

DOE’s fuel-content factor resulted in a stunningly high final “petroleum-equivalency factor” for electricity. 65 Fed. Reg. at 36,992. This gravely distorts compliance with fuel economy standards. For example, a model year 2022 electric Kia Niro has a compliance fuel economy value of 390.6 mpg. 88 Fed. Reg. at 21,533, App.16. Without the fuel-content factor, however, the Kia’s fuel economy would be 58.6 mpg.² That’s lower than the gasoline hybrid Kia Niro, which has a measured fuel economy of 71.1 mpg, better range, and doesn’t need charging infrastructure or an

² 390.6 mpg ÷ (1/0.15) = 58.6 mpg.

enormous and expensive 1,000-pound battery. *Id.* As DOE admits, the fuel-content factor thus “leads to overvaluation of [electric vehicles] in determining ... fleet compliance.” *Id.* at 21,528, App.11.

II. THE PETROLEUM-EQUIVALENCY DETERMINATION FOR MODEL YEARS 2024 AND LATER

A. The Proposed Determination

Since 2010, an astounding array of tax credits and subsidies, federal and state regulations, along with declining battery prices, have increased the share of electric automobiles to over 7% of new sales. 88 Fed. Reg. at 21,528–59, App.11–12. Given this significant change in electric automobile adoption and projected growth, environmental groups asked DOE to align its petroleum-equivalency determination with reality and the law. 86 Fed. Reg. 73,992, 73,993 (Dec. 29, 2021), App.1. In response, DOE proposed a revised petroleum-equivalency determination for model year 2027 and later years. 88 Fed. Reg. at 21,533, App.16. DOE’s proposal addressed the statutory factors as follows.

(i) *Approximate efficiency.* DOE proposed keeping the same two test cycles, arguing that these cycles “provid[e] an accurate measure of the electrical energy efficiency of [an electric vehicle] during typical use.” *Id.* at 21,527, App.10.

(ii) *Electricity generation and transmission efficiency.* DOE proposed revising the gasoline-equivalent energy of electricity. *Id.* at 21,531–33, App.14–16. DOE used a grid model to predict the U.S. mix of electricity-generating units from 2027 to 2031. *Id.* at 21,530, 21,532 & n.53, App.13, 15. DOE then calculated an average gasoline-equivalent energy of electricity (i.e., E_g) of 23,160 Wh/gal for those years. *Id.* at 21,532, App.15.

(iii) *Energy conservation and relative scarcity.* DOE claimed there was a “need to conserve energy” and consider “scarcity” because fossil fuels are “finite” and demand “can change rapidly and be subject to market constraints,” whereas renewables “are not subject to resource depletion.” *Id.* at 21,528, App.11. DOE, however, did not propose to do anything with this finding.

(iv) *Patterns of use.* Finally, DOE claimed that “current [electric vehicles] are equivalently capable vehicles that are likely to be used similarly to gasoline-powered or hybrid-electric vehicles,” and DOE therefore assumed they would be driven the same number of annual miles *Id.* at 21,530, App.13.

(v) *The fuel-content factor.* Most importantly, DOE proposed discarding the extralegal “fuel-content factor” it had added in 2000, for three reasons.

First, since 2000, electric automobile “technology has matured substantially and the market share of [electric vehicles] is now significant and growing,” and the “significant incentives” provided by other subsidies such as tax credits make the fuel-content factor “redundant for purposes of incentivizing manufacture of” electric automobiles. *Id.* at 21,528–29, App.11–12.

Second, the “fuel content factor allows for continued production of inefficient [gasoline] vehicles, thereby encouraging increased petroleum usage.” *Id.* at 21,529, App.12 (emphasis removed). This “runs counter to the need of the nation to conserve energy, particularly petroleum.” *Id.* at 21,530, App.13.

Third, the “fuel content factor lacks legal support.” *Id.* (emphasis removed). DOE observed that “there is no basis in [sections] 32905 or 32904” for a fuel-content factor for electric automobiles. *Id.*

* * *

DOE's proposed petroleum-equivalency factor was 23,153 Wh/gal, a 72 percent decrease compared to the 2000 rule. *Id.* at 21,533, App.16; App.38.

B. The Comments

DOE's proposal, and particularly its proposal to discard the fuel-content factor, was supported by a broad array of stakeholders, including environmental and public interest groups, App.24, 26; states and cities, App.81; liquid fuel producers, App.62; farmers, App.96; and business associations, App.90. Commenters also submitted modeling showing that eliminating the fuel-content factor reduces "overall petroleum consumption." App.27.

Automobile manufacturers, on the other hand, complained that a more realistic petroleum-equivalency factor would require them to increase real average fuel economy or pay fines, as the Motor Vehicle Act requires. App.49–50, 55–56, 128, 130–32. For instance, manufacturers claimed the proposal would reduce model year 2027 compliance values of "the U.S. fleet by 6.7 [mpg] and 2.9 [mpg] for passenger car and light truck fleets," requiring them to pay fines or increase *actual* average fuel economy by investing in more efficient gasoline automobiles. App.49–50.

This, they claimed, would interfere with “the administration’s and automakers’ goals to increase the market share of electric vehicles.” App.50; *see also* Exec. Order No. 14,037, 86 Fed. Reg. 43,583 (Aug. 10, 2021) (setting “a goal that 50 percent of all new” automobiles “sold in 2030” be electric).

The manufacturers urged DOE to keep an inflated fuel-content factor that overvalues the energy savings of electric automobiles. They argued that this would “align[]”—i.e., bias—the Motor Vehicle Act standards to accord with EPA’s treatment of electric automobiles under the Clean Air Act, which ignores the carbon emissions associated with powering an electric automobile, thus creating a compliance bias in favor of electric automobiles. App.50, 54; *see also* 89 Fed. Reg. 27,843, 27,923 (Apr. 18, 2024) (electric automobiles “will be counted as 0 g/mile in compliance calculations”).³ Manufacturers argued that a similar bias under the Motor Vehicle Act would allow manufacturers to focus on making the

³ EPA’s carbon-dioxide standards substantially overlap with NHTSA’s fuel economy standards because carbon dioxide is a natural byproduct of combusting gasoline: the greater the fuel economy of an automobile the lower the carbon emissions measured at the tailpipe, and vice versa. 84 Fed. Reg. 51,310, 51,362 (Sept. 27, 2019); *Delta Constr. Co. v. EPA*, 783 F.3d 1291, 1294 (D.C. Cir. 2015) (A rule that limits greenhouse-gas emissions is “effectively identical to a rule that limits fuel consumption.”).

tax-advantaged electric automobiles desired by the Biden Administration. App.50, 54

To that end, manufacturers requested that DOE at least gradually phase out the fuel-content factor, to provide them with “lead time.” App.50, 106, 109–16. But as others pointed out in response, the manufacturer’s arguments about stringency and lead time were properly directed at NHTSA, which must consider technological feasibility and lead time, not DOE, which has no statutory authority to weigh those considerations. App.118–19, 122.

C. The Final Determination

Nevertheless, in response to manufacturers, DOE changed course in the final rule.

(i) *Approximate efficiency.* Although commenters explained that the test procedure used for gasoline automobiles was inaccurate for electric automobiles, DOE kept it anyway. DOE, however, abandoned its claim that the test procedure “provides an accurate measure of the electrical energy efficiency” of electric automobiles. 88 Fed. Reg. at 21,527, App.10. DOE now instead claims that the test procedure “helps to ensure

a level playing field” with gasoline automobiles. 89 Fed. Reg. at 22,044, Add.4.

(ii) *Electricity generation and transmission efficiency.* In its final rule, DOE also introduced a new, and convoluted, methodology for calculating the gasoline-equivalent energy of electricity based on “the expected survivability-weighted lifetime mileage schedule of the fleet of vehicles sold over the regulatory period.” *Id.* at 22,045, Add.5. Under DOE’s novel methodology, the gasoline-equivalent energy of electricity is determined by weighting the efficiency of the projected electric grid by the vehicle-miles traveled over the assumed forty-year lifetime of an electric automobile. *Id.* at 22,048–49 & tbl. 5, Add.8–9. This new method increases the calculated efficiency of electricity compared to gasoline, because DOE’s model of the grid predicts far heavier reliance on solar and wind power in the decades to come. DOE thus derived a gasoline-equivalent energy of electricity of 28,996 Wh/gal, a 25% increase over the proposal. *Id.* at 22,049 & tbl.5, 22,053, & tbl. 7, Add.9, 13.

(iii) *Energy conservation and relative scarcity.* Despite comments explaining that U.S. fossil fuels continue to be abundant and that scarcity is not a problem, DOE continued to assert a “need” to “conserve

energy” and “scarce” fossil fuels. *Id.* at 22,050, Add.10. As discussed below, DOE used this assertion to justify retaining the fuel-content factor.

(iv) *Patterns of use.* Finally, although commenters showed that electric automobiles are driven far less than gasoline automobiles, *see, e.g.*, App.77–79, in the final rule DOE “maintain[ed] that current [electric vehicles] are full-utility vehicles, capable of comparable performance and range to conventional counterparts.” *Id.* at 22,053, Add.13. DOE therefore concluded they would be driven the same number of miles.

(v) *Fuel-content factor.* DOE decided to retain the “inflated” fuel-content factor “under a revised statutory basis” and to phase it out gradually through model year 2030. *Id.* at 22,050–52 & tbl. 6, Add.10–12; *see also* App.112–13.

Model Year	Fuel-Content Factor
2024–2026	1/0.15
2027	1/0.3625
2028	1/0.575
2029	1/0.7875
2030 and later	1

DOE’s alleged “revised basis” was that, despite “incentives [that] are already driving massive industry investments” in electric automobiles, “an inflated fuel content factor can increase [electric vehicle] adop-

tion” in the near term, because Congress has “not yet adequately incentivized” manufacturers “to develop, manufacture, and market [electric vehicles].” 89 Fed. Reg. at 22,051, Add.11. DOE asserted that this fuel-content factor now somehow reflected the “relative scarcity and value to the United States” of electricity fuels and gasoline. *Id.* at 22,049–51, Add.9–11.

* * *

DOE’s final petroleum-equivalency factors were far higher than the proposed factor:

Model Year	Final (Wh/gal)	Proposed (Wh/gal)
2024–2026	82,049	82,049
2027	79,989	23,160
2028	50,427	23,160
2029	36,820	23,160
2030 and later	28,996	23,160

Id. at 22,053, tbl. 7, Add.13; 88 Fed. Reg. at 21,532, App.15.

That same week, automobile manufacturers joined Biden Administration officials on stage, proclaiming “[t]he future is electric.” All. for Auto. Innovation, *Statement on EPA Greenhouse Gas Emissions and Criteria Pollutant Rules (2027-2032)* (Mar. 20, 2024), <https://perma.cc/B9FN-GHCY>.

SUMMARY OF THE ARGUMENT

DOE's final determination violates the statute and flunks basic principles of administrative law.

First, to begin, DOE's decision to keep a fuel-content factor that has "no basis" is contrary to law and arbitrary. DOE's pretext for keeping the fuel-content factor in the final determination—that fossil fuels are scarce and that Congress hasn't adequately subsidized electric automobiles—has no basis in DOE's statutory duty to *compare* the "relative scarcity and value" of gasoline and electricity fuels and determine equivalent values. That statutory factor invites DOE to compare the price of gasoline and electricity fuels, not to make up any random number that suits DOE's industrial policy. DOE's finding that fossil fuels are scarce is also unreasonably explained. DOE previously concluded that fossil fuels were not scarce, and fossil fuels have only become more abundant. And DOE's explanation for how the fuel-content factor relates to the "relative scarcity and value" of gasoline and electricity fuels doesn't stand up to scrutiny, and relies on a flawed analysis rejected by DOE itself.

Second, DOE's novel "cumulative" method for determining the gasoline-equivalent energy of electricity is unlawful because DOE (1) failed

to seek comment on its novel methodology or the underlying data, (2) considered lifetime miles it isn't allowed to consider under this statutory factor, and (3) relied on outdated data developed for gasoline automobiles that (a) aren't equipped with similar expensive batteries with limited lifespans and (b) have a greater market share of long-lasting pickup trucks and sport-utility vehicles.

Third, DOE arbitrarily ignored the large energy losses that happen when charging an electric automobile.

Fourth, DOE's conclusion that electric automobiles are driven the same number of annual miles as gasoline automobiles relies on studies that DOE never made available for comment, and that are in any event flawed because they rely on an unrepresentative sample of households that own at least one electric automobile and are contradicted by more probative evidence.

Fifth, DOE's explanation for keeping the two-cycle test procedure for electric automobiles doesn't make sense. The test procedure doesn't level the playing field. Instead, it creates a compliance bias in favor of electric automobiles.

STANDING

To show standing, plaintiffs “must demonstrate (1) injury in fact, (2) a causal connection between that injury and the challenged conduct, and (3) the likelihood that a favorable decision by the court will redress the alleged injury.” *Iowa League of Cities v. EPA*, 711 F.3d 844, 869 (8th Cir. 2013) (citation omitted). Petitioners easily satisfy these requirements.

DOE’s determination injures State Petitioners in multiple ways. First, NHTSA’s fuel-economy model shows that, compared to the proposed determination, DOE’s inflated petroleum-equivalency factor for electric automobiles increases overall energy consumption by enabling sales of less efficient gasoline automobiles and increasing power plant emissions, thereby increasing overall greenhouse-gas emissions. Graham Decl. ¶¶ 23–27, 29, Add.24–26. When compared to DOE’s proposal, NHTSA’s model predicts that DOE’s final determination will increase overall carbon-dioxide emissions through at least 2050. *Id.* ¶¶ 25–27, Add.25. The Supreme Court has held that States with coastlines—like some Petitioners in this case—have Article III standing to challenge policies that increase greenhouse gas emissions. *Massachusetts v. EPA*, 549

U.S. 497, 519, 522–23 (2007); *see also Nat. Res. Def. Council*, 894 F.3d at 103–04; Graham Decl. ¶ 28, Add.26. And NHTSA’s model, as well as the comments of the automobile manufacturers, prove that a lower petroleum-equivalency factor “has the potential to affect automakers’ business decisions and compliance approaches.” *Nat. Res. Def. Council*, 894 F.3d at 105; App.50. Petitioners therefore have *Massachusetts* standing. *Nat. Res. Def. Council*, 894 F.3d at 105.

Second, encouraging sales of electric automobiles results in pocket-book injuries to State Petitioners, including (1) increased costs to maintain roads and public infrastructure, (2) increased costs to support building charging stations, and (3) increased electricity rates. Watts Decl. ¶ 9, Add.30.

Road wear increases with vehicle weight, and electric automobiles are, on average, twenty percent heavier than comparable gasoline automobiles, as their 1,000-pound batteries weigh an order of magnitude more than a full gasoline tank. *Id.* ¶¶ 10–11, Add.30. Replacing gasoline automobiles with heavier electric automobiles increases State Petitioners’ costs for maintaining the hundreds of thousands of miles of roads in their States. *Id.* ¶¶ 3, 10–13, Add.29–31. State Petitioners will

also be required to adapt or replace other public infrastructure—such as parking garages and guardrails—to account for increased average automobile weight. *Id.* ¶¶ 12–13, Add.30–31. State Petitioners can also expect to face expenditures associated with the charging infrastructure required for electric automobiles, making plans for how they will install chargers in state-owned facilities and upgrade electric distribution and transmission infrastructure, to accommodate an increase in electric automobiles. *Id.* ¶¶ 14–15, Add.31. Moreover, the increased demand for electric power will predictably increase electricity rates, including for State Petitioners, who own and maintain countless buildings and other facilities that obtain electricity from local utilities. *Id.* ¶¶ 16–19, Add.31–32.

State Petitioners’ injuries are directly traceable to DOE’s petroleum-equivalency determination, which is designed “to incentivize manufacturers’ production of [electric vehicles]” and “accelerat[e] [their] widespread adoption” by reducing the manufacturers’ need to invest in more efficient gasoline engines. 89 Fed. Reg. at 22,051, Add.11. And State Petitioners’ injuries will be redressed if DOE’s inflated determination is vacated—eliminating the artificial incentive to make and sell electric

automobiles—and remanded so DOE can promulgate a new determination that follows the law.

As for AmFree, an organization has associational standing to sue on behalf of its members when (1) at least one member has standing to sue in its own right, (2) the “interests at stake are germane to the organization’s purpose,” and (3) “neither the claim asserted nor the relief requested requires the participation of individual members.” *Iowa League of Cities*, 711 F.3d at 869 (quoting *Friends of the Earth, Inc. v. Laidlaw Env’t Servs. (TOC), Inc.*, 528 U.S. 167, 181 (2000)). Petitioner AmFree easily satisfies this test.

First, AmFree’s members have standing. AmFree includes among its members producers of ethanol, a major component of the fuel used by most gasoline automobiles in the United States, and in automobiles that use E85, which are expressly incentivized by the Motor Vehicle Act. 49 U.S.C. §§ 32901(a)(1)(D), 32905(a); Couser Decl. ¶¶ 2, 4, Add.33. By accelerating the adoption of electric automobiles, DOE’s determination aims to reduce the market for the ethanol produced by AmFree’s members. *Id.* ¶¶ 7–8, Add.33–34. This “competitive harm” is directly traceable to DOE’s inflated petroleum-equivalency determination for electric auto-

mobiles, which DOE says will encourage vehicles that use electricity instead of ethanol. *Sherbrooke Turf, Inc. v. Minn. Dep’t of Transp.*, 345 F.3d 964, 967–68 (8th Cir. 2003); *see also Nat’l Biodiesel Bd. v. EPA*, 843 F.3d 1010, 1015 (D.C. Cir. 2016). The injury will be redressed if the determination is vacated and the incentive encouraging the manufacturing of more electric automobiles removed. *Am. Fuel & Petrochemical Mfrs. v. EPA*, 3 F.4th 373, 379 (D.C. Cir. 2021).

Second, AmFree can represent those interests in court. AmFree “has an obvious interest in challenging a rule detrimental to the financial wellbeing of its members.” *Id.* at 380 (quotation marks removed). And Petitioners don’t seek damages, so participation by an AmFree member is unnecessary. *Id.*

STANDARD OF REVIEW

Under the Administrative Procedure Act (“APA”), courts must “hold unlawful and set aside agency action” that is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law”; “in excess of statutory ... authority”; or “without observance of procedure required by law.” 5 U.S.C. § 706(2)(A), (C)–(D). An agency rule is arbitrary and capricious “if the agency has relied on factors which Congress has not

intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *State Farm*, 463 U.S. at 43.

ARGUMENT

I. DOE’S FUEL-CONTENT FACTOR IS UNLAWFUL

DOE has decided to keep, and slowly phase out, a fuel-content factor that it admitted has “no basis” in the statute. 88 Fed. Reg. at 21,530, App.13. In the final rule, DOE claimed to discover a “revised statutory basis” for keeping the fuel-content factor. 89 Fed. Reg. at 22,050–51, Add.10–11. According to DOE, “an inflated fuel content factor” is lawful and reasonable because, in its view, Congress hasn’t “adequately incentivized” automobile manufacturers “to develop, manufacture, and market” electric automobiles in the near term. *Id.* at 22,051, Add.11.

This “revised basis” is no more lawful or reasonable than the first. Indeed, it is not even a revised basis. DOE’s “basis” remains the same: it seeks to “reward” electric automobiles beyond the level Congress has deemed appropriate. 65 Fed. Reg. at 36,988. Muttering the words “con-

servation” and “scarcity” doesn’t make this any more lawful or reasonable.

A. DOE’s Fuel-Content Factor Is Contrary to Law

DOE isn’t writing on a blank slate. DOE promulgated the fuel-content factor to “reward” electric automobiles with the incentive Congress gave to automobiles powered by ethanol and natural gas. 65 Fed. Reg. at 36,987–88.

As DOE recognized in its proposal, that conflicts with Congress’s different treatment of electric automobiles in the Motor Vehicle Act. 88 Fed. Reg. at 21,530, App.13. Congress provided a fuel-content factor for alternative fuels “[e]xcept” for electricity, which remained subject to “section 32904(a)(2)” —the “petroleum equivalent” determination. 49 U.S.C. § 32905(a); *see also id.* § 32906 (excluding “electric automobile[s]” from an accompanying incentive sunset for dual-fueled vehicles). Congress provided the specific 1/0.15 fuel-content factor for alternative liquid and gaseous fuels, but not for electricity. *Id.* § 32905(a), (c). DOE’s decision to nevertheless extend the same incentive to electric automobiles by regulatory ukase, despite the carve-out of electric automobiles from the Act’s statutory incentive scheme, blatantly disregards the text and structure

of the law. “Nowhere does the Act provide any support for this claimed authority, and in fact it is directly inconsistent with [Section 32905] of the Act, which show[s] that” electric automobiles were excluded from the Act’s fuel-content factor scheme. *ETSI Pipeline Project*, 484 U.S. at 506.

DOE now claims that, all along, section 32904(a)(2) authorized it to repackage the same incentive treatment for electric automobiles as part of the petroleum-equivalency determination. DOE’s reading of the law is pretextual and wrong.

“As always, we start with the text.” *Twitter, Inc. v. Taamneh*, 598 U.S. 471, 484 (2023). DOE’s basic task under section 32904 is to “determine” “*equivalent* petroleum based fuel economy values” for electric automobiles. 49 U.S.C. § 32904(a)(2)(B) (emphasis added). “Equivalent” means “[c]apable of being put into a one-to-one relationship.” *The American Heritage Dictionary of the English Language* 443 (1969). DOE’s basic role is therefore to make a “one-to-one” comparison of electric and gasoline automobiles, on an apples-to-apples basis.

Now consider statutory “context” and DOE’s “place in the overall statutory scheme.” *West Virginia*, 597 U.S. at 721. DOE has an ancillary role in assisting EPA’s ministerial duty to “calculate the average fuel

economy” of manufacturers. 49 U.S.C. § 32904(a)(1). Context thus indicates that DOE’s task is not balancing national vehicle policy considerations, considering capital investment flows, or lead time. That’s NHTSA’s job. 49 U.S.C. § 32902(a), (f). DOE must instead make a factual comparison of the energy conservation benefits of electric and gasoline automobiles.

Congress further constrained DOE by specifying that the comparison must be “based on” four factors. The first two require comparing vehicle and fuel “efficiency.” 49 U.S.C. § 32904(a)(2)(B)(i)–(ii). The last requires comparing the automobiles’ “patterns of use”—how often electric automobiles are driven compared to gasoline automobiles. *Id.* § 32904(a)(2)(B)(iv). These are objective factors, delegating to DOE a narrow and technical task that requires making a comparison based on facts, not policy. And the factors are connected to Congress’s “overarching goal” of the Motor Vehicle Act—conserving energy. *Ctr. for Auto Safety*, 793 F.2d at 1340; 42 U.S.C. § 6201(5).

Sandwiched between these three factors is “the need of the United States to conserve all forms of energy and the relative scarcity and value ... of all fuel used to generate electricity.” 49 U.S.C. § 32904(a)(2)(B)(iv).

DOE claims that this gives it discretion to use “inflated” values with no relation to reality to “incentivize [electric-vehicle] production” to the extent it sees fit. 89 Fed. Reg. at 22,052, Add.12.

“That ... [is] not the idea Congress enacted into law.” *MCI Telecomms. Corp. v. AT&T*, 512 U.S. 218, 232 (1994). Properly read, this factor delegates a more limited task to DOE. DOE must compare the “relative scarcity and value” of gasoline and fuels used to generate electricity and determine their “equivalent” values. 49 U.S.C. § 32904(a)(2)(B). By using the word “relative,” Congress required DOE to make a “comparison.” *The American Heritage Dictionary, supra*, at 1098. And in a market economy such as the United States, the “scarcity and value” of a fuel is given by price, not bureaucratic say so. See Thomas Sowell, *Basic Economics* 21–22 (5th ed. 2015). Or, as DOE concluded when the statute was enacted, “marginal prices ... reflect the true value of energy savings to the Nation as called for in the Act.” 45 Fed. Reg. at 34,013. When the law was enacted, DOE therefore read this factor to call for a comparison of the price of gasoline and the price of electricity fuels. 46 Fed. Reg. at 22,747, 22,750–51. This “cotemporaneous construction” by DOE “is enti-

tled to very great respect.” *Edwards’ Lessee v. Darby*, 25 U.S. 206, 210 (1827).

It is also the best reading in context. Interpreted this way, the third factor, like the first, second, and fourth, delegates to DOE a duty to make a narrow one-to-one comparison based on facts. This makes sense of “the company” the third statutory factor keeps. *Gustafson v. Alloyd Co.*, 513 U.S. 561, 575 (1995). And DOE’s 1981 reading also makes sense of the statutory purpose. It still encourages electric automobiles, but only to the extent they actually save U.S. consumers money by using less costly fuels—that is, only to the extent they advance the goals of the Motor Vehicle Information *and Cost Savings* Act—promoting “efficiency,” and saving consumers money on energy in the process. 42 U.S.C. § 6201(5). For example, in the 1980s, gasoline was far more expensive than the fuels, such as coal, used to generate electricity, so electric automobiles got an efficiency boost, but one tethered to real facts and statutory text. 46 Fed. Reg. at 22,748–49 & tbl. III.

DOE’s novel reading, by contrast, is entirely divorced from the text, and untethered from any factual comparison. How does the fuel-content factor compare the “relative scarcity and value” of gasoline and electric-

ity? DOE does not say. And how does a 0.15 divisor produce “equivalent” values for electricity and gasoline? DOE says it doesn’t; it produces “inflated” values. 89 Fed. Reg. at 22,051, Add.11. On DOE’s account, the phrase “relative scarcity and value” does no real work: DOE may use “inflated,” not “relative,” values whenever it thinks that doing so will encourage electric automobiles.

DOE’s reading is “at odds with one of the most basic interpretive canons, that a statute should be construed so that effect is given to all its provisions, so that no part will be inoperative or superfluous, void or insignificant.” *Corley v. United States*, 556 U.S. 303, 314 (2009) (cleaned up). Under DOE’s reading, Congress could have just told DOE to pick whatever number encourages the most electric automobiles. If DOE may multiply the efficiency of electricity by 666% as an “incentive,” why not assume the efficiency of electric automobiles is “infinite,” as the automobile manufacturers suggested? App.46–47. That too, would prevent manufacturers from being distracted by the need to invest in developing more efficient gasoline automobiles, as the Motor Vehicle Act requires. 89 Fed. Reg. at 22,052, Add.12.

DOE's reading mistakes the policy priorities of the Biden Administration and automobile manufacturers for those of the Motor Vehicle Act. The goal of the Motor Vehicle Act is to conserve energy and promote efficiency, not to promote tax-advantaged electric automobiles. *Ctr. for Auto Safety*, 793 F.2d at 1340. Although the Motor Vehicle Act encourages electric automobiles to the extent they advance the Act's purposes of conserving energy and saving consumers money (that's the point of all four factors), regulatory comments and NHTSA's model show that DOE's fuel-content factor doesn't conserve energy. Quite the opposite. It hurts energy conservation. *See* Graham Decl. ¶¶ 19–29, Add.23–26; App.27. DOE was right to propose a repeal: the fuel-content factor “runs counter” to the statute's purpose of conserving energy. 88 Fed. Reg. at 21,530, App.13. DOE's new claim that retaining the fuel-content factor will “conserve energy” has no basis in fact.

More fundamentally, DOE's reading makes no sense in context, and lacks “common sense.” *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000). DOE asserts the power to decide whether Congress has “adequately incentivized” electric automobiles. 89 Fed. Reg. at 22,051, Add.11. Instead of comparing relative fuel prices, DOE claims

that section 32904(a)(2) allows it to consider momentous questions of industrial policy such as “network effects,” “the redeployment of capital and human resources at the firm and country level,” “infrastructure deployment,” and ultimately, second-guess whether Congress has “adequately incentivized” manufacturers “to develop, manufacture, and market” electric automobiles. *Id.* at 22,050–51, Add.10–11. As the automobile manufacturer’s comments demonstrate, DOE’s claimed power to use inflated values has vast economic significance. App.49–50. DOE claims that Congress buried all this tacit industrial policy authority into one factor in subsection 32904(a)(2), within a section about ministerial compliance calculations.

That makes no sense, and it makes a hash out of the statute. Under the Motor Vehicle Act, NHTSA, not DOE, balances “the need of the United States to conserve energy” against policy considerations, such as “economic practicability.” 49 U.S.C. § 32902(f). Congress did not, in an “ancillary provision of the Act” about compliance calculations, give DOE the power to undermine the stringency of NHTSA’s standards and decide major questions such as “how much [electric-automobile investment] there should be over the coming decades.” *West Virginia*, 597 U.S. at 729

(cleaned up). Nor did it vest in DOE the power to ask whether Congress’s tax credits for electric automobiles are “adequat[e]” enough. 89 Fed. Reg. at 22,051, Add.11. “The basic and consequential tradeoffs involved in such a choice are ones that Congress would likely have intended for itself.” *West Virginia*, 597 U.S. at 730.

Indeed, Congress *did* make those tradeoffs. It gave the electrification incentives it deemed necessary, and decisively rejected extending the alternative fuel incentives to electric automobiles. 49 U.S.C. §§ 32905(a), 32906(a); 89 Fed. Reg. at 22,051, Add.11. “Where Congress wanted to provide [an artificial fuel-content factor], it did so explicitly, as demonstrated by other sections in the Act.” *Barnhart v. Sigmon Coal Co.*, 534 U.S. 438, 452 (2002). “In light of these specific provisions, as well as the general background to the Act, it is beyond question that [DOE] does not possess the authority that is claimed in this case.” *ETSI Pipeline Project*, 484 U.S. at 505.

B. DOE’s Fuel-Content Factor Is Arbitrary and Capricious

DOE’s claim that the “need ... to conserve all forms of energy” and “the relative scarcity and value” of fuels justify its fuel-content factor is also arbitrary and capricious for at least two reasons. 89 Fed. Reg. at

22,050, Add.10. First, DOE changed its position on fossil fuel “scarcity” without adequate explanation. Second, DOE did not explain how the fuel-content factor is tethered to the statutory text.

1. *U.S. energy is abundant, not scarce.*

After careful analysis, DOE concluded in 2000 that while theoretically finite, “the raw resources used to produce gasoline and diesel fuel” were “abundant.” 65 Fed. Reg. at 36,988. Indeed, the agency reasoned, the “‘proved reserves’ of all of these energy resources tend to increase over time as new resources are discovered and better recovery techniques are developed.” *Id.* As a result, the relative scarcity of petroleum should not be a “guiding factor.” *Id.* DOE, however, now claims that finite fossil fuel resources warrant the agency’s electric automobile subsidy. 89 Fed. Reg. at 22,050, Add.10.

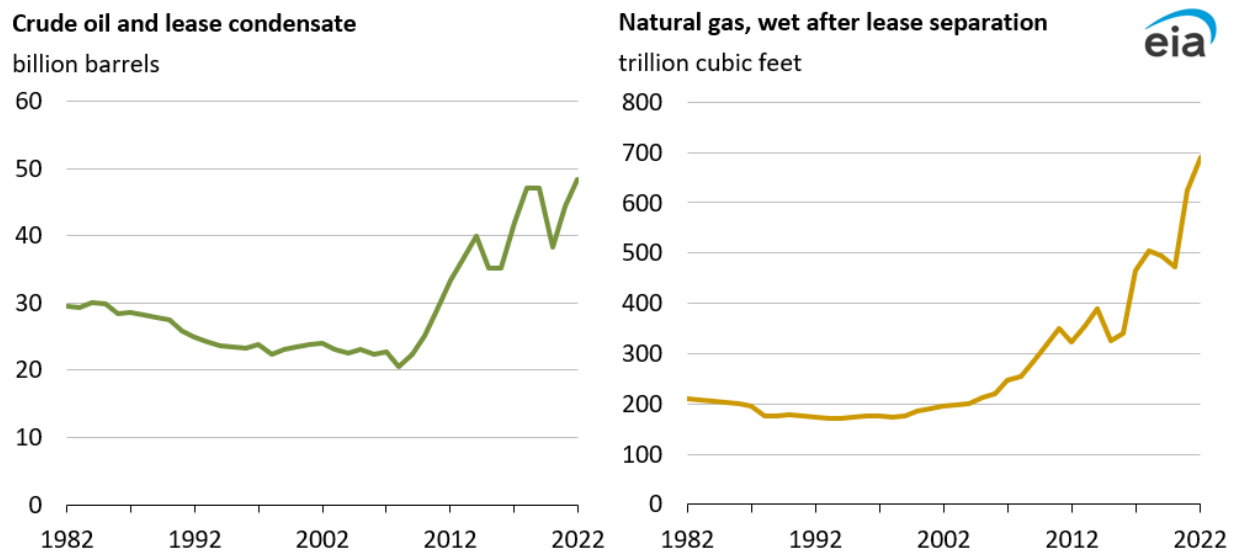
DOE must provide “a reasoned explanation ... for disregarding facts and circumstances that underlay” its prior position. *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 222 (2016) (quoting *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 516 (2009)). It hasn’t done so. DOE doesn’t explain what changed facts or circumstances warrant a different conclu-

sion. Indeed, changed facts undermine, rather than support, DOE’s change in position.

As DOE itself has elsewhere explained, “[t]he U.S. energy landscape has undergone a dramatic transformation since 2005.” DOE, *Economic and National Security Impacts under a Hydraulic Fracturing Ban* 6 (Jan. 2021), <https://tinyurl.com/3pjmxc6d>. New hydraulic fracturing and horizontal drilling technology have “fundamentally changed America’s energy outlook and upended global energy flows, enabling the country to achieve long-sought energy security goals.” *Id.*

Since 2000, U.S. proved crude oil reserves—the volume of crude oil that is recoverable under existing economic conditions—have grown rapidly. Energy Info. Admin, *U.S. Crude Oil and Natural Gas Proved Reserves*, <https://perma.cc/8W3P-NRGX> (updated Apr. 29, 2024). Proved U.S. reserves have now more than doubled in that time, totaling 48.3 billion barrels, following the upward trend the agency predicted in 2000. *Id.*, fig. 1 (shown below). And natural gas, used for electricity, has followed a similar trend. *Id.*

Figure 1. U.S. proved reserves, 1982-2022



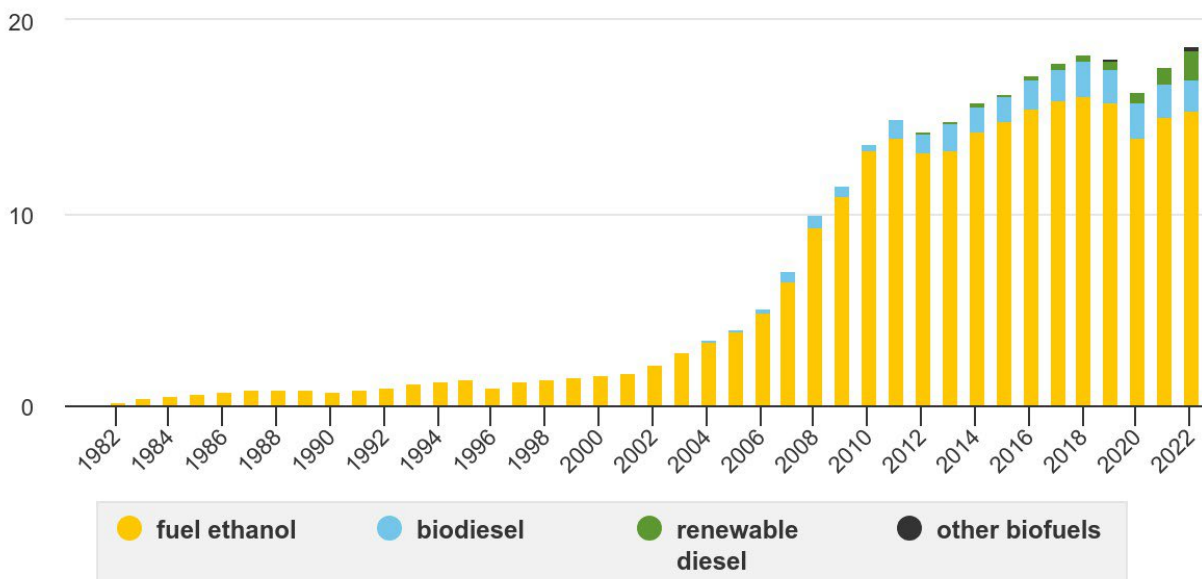
This precipitous increase in proved reserves is a result of the shale revolution of 2008, in which better recovery techniques allowed oil and gas producers to economically extract huge volumes of previously inaccessible resources. The shale revolution transformed the United States from the world's largest importer of oil and natural gas in the 2000s to a net exporter of oil and refined oil products and the world's largest exporter of natural gas today. Energy Info. Admin., *U.S. Net Imports of Crude Oil and Petroleum Products*, <https://perma.cc/J6HY-R6NW> (updated Apr. 30, 2024).

At the same time, the U.S. has seen an astonishing increase in the production of renewable liquid fuels—particularly the volumes of U.S.

ethanol available for use in gasoline—further reducing the need to import foreign oil.

U.S. biofuels production by major type, 1981-2022

billion gallons



Data source: U.S. Energy Information Administration, *Monthly Energy Review*, February 2024, Table 10.3 and Tables 10.4a, b, and c



Note: Fuel ethanol includes denaturant.

But as U.S. oil and renewable liquid fuel abundance has increased, DOE’s assessment has gone the opposite direction. In the final rule, DOE invokes “scarce fossil energy resources” to justify its electric-automobile handout to manufacturers. 89 Fed. Reg. at 22,050, Add.10. The agency offers no explanation for abandoning its position on the “abundance” of oil. It does not address trends in proved reserves. Nor does it grapple with how “incentiviz[ing] additional [electric-vehicle] production” might impact the ability “of the United States to conserve *all* forms of energy.”

Id. (emphasis added). Nor did DOE address this evidence after it was raised by commenters. *See* App.73–75. DOE thus failed to offer a reasoned explanation or “consider and respond to significant comments received during the period for public comment.” *Perez v. Mortg. Bankers’ Ass’n*, 575 U.S. 92, 96 (2015); *see also Carlson v. Postal Regul. Comm’n*, 938 F.3d 337, 344 (D.C. Cir. 2019).

2. *The fuel-content factor for electric automobiles is made up.*

DOE’s fuel-content factor value is also arbitrary and capricious. DOE’s asserted relation between a fuel-content factor of 1/0.15 and the statutory text remains “mystifying.” *Sorenson Commc’ns Inc.*, 755 F.3d at 707–08 (agency rule requiring subscribers to pay “at least \$75” for certain phones was arbitrary and capricious because the agency failed to explain why it picked that amount). Congress is free to extend arbitrary incentives, 49 U.S.C. § 32905(c); DOE is not, 5 U.S.C. § 706(2)(A).

DOE’s reasoning also doesn’t make sense. First, DOE claims the fuel-content factor is justified because electric automobiles are “more energy efficient than [gasoline automobiles] on an energy input required basis.” 89 Fed. Reg. at 22,050, Add.10. But that difference is already addressed by the first two statutory factors. DOE can’t double count this

benefit. *See Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1524–25 (D.C. Cir. 1984) (rejecting agency methodology that double-counted inflation effects).

Second, DOE says the factor is justified because “[electric vehicles] provide even greater fuel conservation benefits when compared to gasoline,” citing an analysis purportedly accounting for fuel scarcity. 89 Fed. Reg. at 22,050, Add.10 (citing 88 Fed. Reg. at 21,536, App.19). But DOE’s scarcity methodology is deeply flawed and does not yield a reliable comparison. It ignores the “value” of the resources, so it discards half of the statutory phrase “scarcity *and* value.” 49 U.S.C. § 32904(a)(2)(B)(iii) (emphasis added). And it mixes metrics, measuring scarcity of fossil fuels based on “proved reserves,” and the scarcity of DOE’s preferred electricity sources—solar, wind, geothermal, etc.—based on infrastructure lifetimes. AR14 (PEF_Calculation sheet, cells I99 to Q99). Even more, DOE’s calculation of those metrics is incorrect and arbitrary. The agency ignores continued exploration, which tends to increase the availability of fossil fuel resources, and does not explain its estimates of solar, wind, and other electricity sources’ infrastructure lifetimes, seemingly picking numbers out of a hat. *Id.*

DOE acknowledged these flaws when it rejected the scarcity analysis in the proposal, explaining that the methodology “has significant drawbacks” that make it “unsuitable for use in calculating the” petroleum-equivalency factor, and that using it “would likely increase total petroleum usage.” 88 Fed. Reg. at 21,536, App.19. DOE provides no explanation for relying on this methodology now, and, in any event, DOE’s deeply flawed analysis of scarcity does nothing to explain DOE’s particular choice of “1/0.15” for its fuel-content factor. *State Farm*, 463 U.S. at 43.

DOE’s invented incentive for electrification was not “the product of agency expertise.” *Id.* Rather, DOE’s incentive is just a chess piece it unlawfully snuck on the board to advance the Administration’s whole-of-government approach to electrify automobiles. Exec. Order No. 14,037, 86 Fed. Reg. at 43,583. EPA ignores the emissions associated with the generation of electricity when measuring automobile carbon-dioxide emissions under the Clean Air Act. But the Motor Vehicle Act forbids DOE from similarly ignoring electricity generation when measuring efficiency. 49 U.S.C. § 32904(a)(2)(B)(ii). So, to get automobile manufacturers to go along with the Administration’s plan, DOE kept a fuel-content

factor that was illegal from the get-go, and came up with a pretext for its concededly illegal maneuver. DOE may have recited the words of the statute and decorated the preamble with fancy terms such as “network effects” and “S-Curve.” But this Court is “not required to exhibit a naiveté from which ordinary citizens are free.” *Dep’t of Com. v. New York*, 139 S. Ct. 2551, 2575 (2019) (quoting *United States v. Stanchich*, 550 F.2d 1294, 1300 (2d Cir. 1977) (Friendly, J.)).

II. DOE’S CUMULATIVE GASOLINE-EQUIVALENCY METHODOLOGY IS UNLAWFUL

A. DOE’s Failure To Disclose the Methodology and Data in Time for Comment Violates the APA

Under the APA, agencies must provide “notice ... sufficiently descriptive of the ‘subjects and issues involved’ so that interested parties may offer informed criticism and comments.” *Citizens Telecomms*, 901 F.3d at 1005 (quoting *Nw. Airlines, Inc. v. Goldschmidt*, 645 F.2d 1309, 1319 (8th Cir. 1981)). This includes “provid[ing] an opportunity for comment on the ... methodology” and the “technical studies and data” used to support the agency’s position. *Owner-Operator Indep. Drivers Ass’n*, 494 F.3d at 199, 201. DOE’s determination fails this requirement.

DOE's proposed determination was straightforward. It was based on a gasoline-equivalent energy of electricity for five specific years—2027 through 2031. 88 Fed. Reg. at 21,532–33, App.15–16. But DOE's final determination is based on a novel and convoluted methodology that was never presented for comment. Instead of looking at the electric grid for the years during which the automobiles are manufactured, DOE now looks at the grid over “the expected survivability-weighted lifetime mileage schedule of the fleet of vehicles sold over the regulatory period.” 89 Fed. Reg. at 22,045, Add.5.

Here's how the new method works. DOE first predicts the annual gasoline-equivalent energy of electricity over the lifetime of the vehicle. Because DOE claims, without evidence, that electric automobiles may last up to 40 years, DOE now makes grid projections out to at least 2070. *Id.* at 22,046–47, Add.6–7.

DOE then guesses the composition of the electric-automobile fleet (i.e., the share of passenger cars, sport-utility vehicles, and pickups) that will be sold and predicts the number of miles, on average, an electric automobile will be driven each year, out to 40 years. *Id.* at 22,048, tbls. 4, 5, Add.8. For example, DOE estimates that an average electric auto-

mobile will be driven 16,647 miles in its first year, *id.* at 22,048, tbl. 4, Add.8, which accounts for 7.94% of the vehicle’s lifetime miles, *id.* at 22,048, tbl. 5, Add.8.

Finally, DOE (1) multiplies the share of lifetime miles driven by the average electric automobile each year by DOE’s predicted gasoline-equivalent energy of electricity that year; and (2) adds the values to derive a lifetime, or cumulative, gasoline-equivalent energy of electricity, or “CE_g.” *Id.* at 22,048–49, tbl. 5, Add.8–9.

“The APA’s procedural rules are designed to allow parties the opportunity for informed criticism and comments.” *Citizens Telecomms.*, 901 F.3d at 1005. As a result, “an agency must disclose critical information justifying the proposal in time for public comment.” *GPA Midstream Ass’n v. Dep’t of Transp.*, 67 F.4th 1188, 1197 (D.C. Cir. 2023). But DOE provided no notice that the agency was considering this novel survivability-weighted lifetime-mileage approach. Nor did the agency disclose the critical data on which it relied on for its calculations, including the mileage and survivability schedule for electric automobiles, the forecast of the electric-automobile-fleet composition, or the new grid projections that the agency used.

Commenters are not required “to play hunt the peanut,” guessing at alternatives or technical data that an agency might consider. *Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 237 (D.C. Cir. 2008) (quoting *Conn. Light & Power Co. v. Nuclear Regul. Comm’n*, 673 F.2d 525, 530 (D.C. Cir. 1982)). But that is exactly what DOE did. DOE made a petroleum-equivalency determination based on an “entirely new” methodology that departed radically from the well-understood approach followed in the proposed rule and all prior DOE determinations. *Owner-Operator Indep. Drivers Ass’n*, 494 F.3d at 201. DOE’s new method requires the agency to determine the efficiency of the grid mix not just for the year a vehicle is made, but for 40 years in the future. It also requires forecasting the composition of electric automobile sales in any given year. And it requires knowing the expected lifetime and annual number of miles driven by different types of electric automobiles. 89 Fed. Reg. at 22,045–49, Add.5–9. That is a vastly different inquiry than simply determining the efficiency of the grid the year a vehicle is sold.

Interested parties knew DOE would calculate a gasoline-equivalent energy of electricity, but “had no way of knowing that the agency would calculate [it] in the way that it did.” *Owner-Operator Indep. Drivers Ass’n*,

494 F.3d at 202. “By remaining silent about” its new methodology and data until the final rule, DOE “sandbagged ... the public, sidestepping the process of public deliberation required by law.” *GPA Midstream*, 67 F.4th at 1197.

Nor does it matter that other commenters gestured at a lifetime-mileage approach. See 89 Fed. Reg. at 22,047–48, Add.7–8. “The APA requires interested parties wishing to play a role in the rulemaking process to comment on the *agency’s* proposals, not on other interested parties’ proposals.” *Citizens Telecomms.*, 901 F.3d at 1006 (emphasis in original). “Agencies ‘cannot bootstrap notice from a comment.’” *Id.* (quoting *Shell Oil Co. v. EPA*, 950 F.2d 741, 760 (D.C. Cir. 1991)).

“Losing the opportunity to dissuade an agency from adopting a particular rule is prejudicial.” *Id.* Indeed, “[r]equiring more than a procedural violation of the notice requirement in order to find prejudice would risk virtually repealing the APA’s procedural requirements.” *Id.* To show prejudice, Petitioners “need not show the agency, had it adhered to the procedural requirements of the law, would have reached a different result. They need only show they had something useful to say.” *GPA Midstream*, 67 F.4th at 1198–99 (cleaned up).

Petitioners had something useful to say. As explained next, Petitioners would have pointed out, among other things, that DOE’s new method and data are inaccurate, as well as arbitrary and capricious. That is more than enough to demonstrate prejudice. *Citizens Telecomms.*, 901 F.3d at 1006; *see also Chamber of Com. v. SEC*, 443 F.3d 890, 904 (D.C. Cir. 2006).

DOE is required to “turn square corners in dealing with the people.” *Dep’t of Homeland Sec. v. Regents of the Univ. of Cal.*, 591 U.S. 1, 24 (2020). But here, the agency “cut corners to the prejudice of the petitioners, the administrative process, and thus the public.” *GPA Midstream*, 67 F.4th at 1202.

B. DOE May Not Consider Electricity Over an Automobile’s Lifetime

DOE’s new methodology is also contrary to law and arbitrary and capricious because an automobile’s useful life is not among the statutory factors DOE is permitted to consider under 49 U.S.C. § 32904(a)(2)(B)(ii). *State Farm*, 463 U.S. at 43. DOE must consider “*the* national average electrical generation and transmission efficiencies” and must “review those values each year and determine and propose necessary revisions.” 49 U.S.C. § 32904(a)(2)(B)(ii) (emphasis added). The ordinary reading of

the definite article “the” is that DOE must consider the grid during the year the automobile is made, not 40 different grids across an automobile’s possible lifetime. *Rumsfeld v. Padilla*, 542 U.S. 426, 434–35 (2004). DOE’s duty to reconsider the values “each year” further underscores that Congress wanted DOE to consider the grid as it exists when “a manufacturer manufactures an electric vehicle” and certifies its fuel economy, rather than speculating about what might happen to both the grid and the automobile decades in the future. 49 U.S.C. § 32904(a)(2)(B). “Where a statute is clear, the agency must follow the statute.” *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 276 (2016).

There was good reason for Congress to require DOE to focus on the efficiency of the grid as it exists when an automobile is manufactured, rather than making far-flung projections about what the grid will look like over decades. By requiring projections of the electric grid more than 40 years in the future, out to 2070, DOE’s new methodology “open[s] the door to crystal ball inquiry,” *Int’l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 629 (D.C. Cir. 1973) (cleaned up), and transforms DOE’s task from fact-finding to “mere speculation,” *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1150 (D.C. Cir. 2011).

As DOE explains in its proposal, future projections about the grid diverge widely. DOE's projections in the "2021 Electrification 95 by 2050, Standard Scenario," are very different from DOE's "Annual Energy Outlook (AEO) 2022," which "DOE generally regards ... as one of the best available projections for future grid mix and energy prices." 88 Fed. Reg. at 21,531, App.14. Choosing between speculative projections opens up the calculations to more, rather than less, uncertainty and potential error, and violates the agency's statutory obligation.

DOE "has relied on factors which Congress has not intended it to consider," namely, the grid over an electric automobile's lifetime, so the novel methodology both exceeds its authority and is arbitrary and capricious. *State Farm*, 463 U.S. at 43.

C. DOE's New Methodology Relies on Inaccurate and Insufficient Data

DOE's new calculation is also arbitrary and capricious because DOE "relied upon insufficient empirical data." *Bus. Roundtable*, 647 F.3d at 1150.

First, DOE's mileage and survivability schedule is based on outdated data from *gasoline* automobiles dating back to the 1980s. 89 Fed. Reg. at 22,047–49 & n.16, Add.7–9, *see also* NHTSA, *Draft Technical*

Support Document 4-26 to 4-41 (July 2023), <https://perma.cc/EA9F-6GW7> (“NHTSA TSD”). But the limited lifetime of electric automobile batteries, by far the most expensive component of an electric automobile, suggests that these automobiles will be scrapped at a higher rate, making DOE’s prediction that electric automobiles will survive for as much as 40 years (and 209,742 miles) dubious, at best.

EPA has recognized that battery degradation “could reduce” an electric automobile’s “total lifetime mileage,” 89 Fed. Reg. at 27,968, and therefore required batteries to last 8 years or 100,000 miles without degrading below 70% of the battery’s certified energy storage, *id.* at 27,971, tbl. 65. That may help, but eight years is much less than 40, and 100,000 miles is far less than 209,742 miles. And because many electric automobile batteries cannot be repaired, insurance companies often write off electric automobiles with very few miles on them, even after relatively small accidents. Nick Carey et al., *Insight: Scratched EV Battery? Your Insurer May Have to Junk the Whole Car*, Reuters (Mar. 20, 2023), <https://tinyurl.com/4zvcctj4>. By relying on dubious speculation about the lifetime of an electric automobile, DOE gives far too much weight to electric grid projections 10, 20, or 30 years in the future.

Second, DOE’s mileage schedule also assumes the electric-automobile fleet has the same composition as the gasoline-automobile fleet: 17.4% pickup trucks, 20.2% passenger cars, and 62.4% vans or sport-utility vehicles. 89 Fed. Reg. at 22,048, Add.8. But this is not true. Through April 2024, only 4.3% of electric automobiles sold this year were pickup trucks, and nearly 30% were passenger cars. Argonne Nat’l Lab’y, *LDV Total Sales of PEV and HEV by Month 5* (updated Apr. 2024), <https://perma.cc/Y2GS-6FXV>. Nor does DOE present evidence that this will change significantly for model years 2027 through 2031. 89 Fed. Reg. at 22,048, Add.8 (DOE “lacks accurate information about individual automaker plans for electrifying their product lines”). By overcounting pickup trucks—which are driven the most and kept the longest, NHTSA TSD at 4-41, tbl. 4-12—and undercounting passenger cars—which are driven the least and scrapped earliest, *id.*—DOE again overcredits future electric grid projections.

“Using data ill-suited to the task is not excused by failure—even good faith failure—to locate suitable data.” *Am. Pub. Gas Ass’n v. Dep’t of Energy*, 22 F.4th 1018, 1029 (D.C. Cir. 2022). And here, DOE made no effort to locate or examine data germane to electric automobiles.

Especially, where, as here, the projections are “a crucial part of the analysis,” DOE cannot simply “sa[y] it did the best it could with the data it had.” *Id.* at 1027.

III. DOE’S FAILURE TO ACCOUNT FOR CHARGING LOSSES IS ARBITRARY AND CAPRICIOUS

DOE also arbitrarily failed to fully account for transmission losses.

Generally, when filling a fuel tank with gasoline, very little fuel is lost—a few drops, at most. But that’s not true when charging an electric automobile’s battery. Not all the electric current supplied to an electric automobile ends up as useable energy in the battery. Some of the energy is used to help the battery charge properly (i.e., keeping the battery at an appropriate temperature for charging), but some energy is simply lost as waste heat. How much energy is lost depends on the charging conditions, including the ambient temperature and whether fast charging is used, but the losses can be substantial. Roughly *twelve to forty percent* of the energy transmitted to an electric automobile is lost. See John Voelcker, *EVs Explained: Charging Losses*, Car & Driver (Apr. 10, 2021), <https://tinyurl.com/mtcjvs72>; E. Apostolak-Iosifidou et al., *Measurement of Power Loss During Electric Vehicle Charging and Discharging*, 127 Energy 730,

737, tbl. 7 (2017) (measuring twelve to seventeen percent charging losses).

These losses dwarf the transmission losses that DOE accounts for. 89 Fed. Reg. at 22,045, tbl. 2, Add.5 (estimating power line losses at less than five percent). And these losses matter. Transmission losses are cumulative, meaning charging losses of fifteen percent would reduce the gasoline-equivalent energy of electricity by a commensurate amount—fifteen percent.

DOE, however, ignored charging losses, even after they were raised in comments, *see* App.73, without ever explaining why. DOE’s “entir[e]” failure “to consider [this] important aspect” of transmission efficiency was arbitrary and capricious. *State Farm*, 463 U.S. at 43; *Perez*, 575 U.S. at 96.

IV. DOE’S FAILURE TO ACCOUNT FOR DIFFERENCES IN PATTERNS OF USE IS UNLAWFUL

Congress required DOE to “compare[]” “the specific patterns of use of electric vehicles ... to petroleum-fueled vehicles.” 49 U.S.C. § 32904(a)(2)(B)(iv). Congress did so because a “petroleum-fueled vehicle has a greater number of vehicle miles travelled annually than the electric vehicle due to the limited range restriction of electric vehicles.” 45 Fed.

Reg. at 34,012. This means that electric automobiles, because they are driven less, will conserve less energy over their lifetimes than say, a gasoline hybrid with a similar efficiency that is driven more frequently. And yet, for four decades, DOE has ignored this mandated statutory factor, claiming without evidence that electric automobiles have similar performance and are driven the same number of miles as gasoline automobiles. Neither assertion is true.

A. DOE's Failure To Disclose Studies in Time for Comment Violates the APA

DOE violated the APA's procedures by failing to disclose for comment the critical studies it relied upon to conclude that electric automobiles are driven the same number of miles.

In the proposal, DOE simply asserted that electric and gasoline automobiles are driven the same number of miles without providing any support. 88 Fed. Reg. at 21,530, App.13. Commenters responded with studies and data showing that electric automobiles are *not* equally capable to gasoline automobiles, as electric automobiles have substantially lower ranges and are driven considerably fewer miles per year than comparable gasoline automobiles. *See, e.g.*, App.77–79.

For the first time in the final rule, DOE pointed to several studies the agency claimed supported its position. *See* 89 Fed. Reg. at 22,053 & nn.25–27, Add.13. But DOE cannot “rely, without affording comment, on data critical to support a rule solely because the existing record contains a deficiency that extra-record data might cure.” *Chamber of Com.*, 443 F.3d at 903. DOE was required to make the “technical studies and data” it relied upon available for public comment. *Id.* at 899. By failing to disclose these studies in time for public comment, and requiring that commenters play “hunt the peanut,” DOE violated the APA’s notice-and-comment requirement.

And as explained next, DOE’s failure was prejudicial. Had Petitioners been afforded the opportunity to comment on the studies, they would have explained that DOE’s preferred studies are unreliable, while the many other studies DOE ignores or criticizes uniformly show that electric automobiles are driven less than gasoline automobiles.

B. DOE’s Conclusion Is Unsupported by the Record

DOE primarily relies on a report from University of California-Davis, which the agency describes as finding “that long-range [electric vehicles] are driven significantly more than short-range [electric vehi-

cles] and more than [gasoline] vehicles.” 89 Fed. Reg. at 22,053, Add.13 (describing Gil Tal et al., *Advanced Plug-in Electric Vehicle Travel and Charging Behavior Final Report* (Apr. 10, 2020), <https://perma.cc/Z8P8-2ZV9> (“U.C. Davis Report”)). But the U.C. Davis Report is based on biased data that doesn’t provide an accurate comparison of driving patterns.

Notably, the report was based on surveys and data from *California* households that all *owned electric automobiles*. U.C. Davis Report at 24–25. The authors acknowledge that the survey participants are not representative of California households, much less U.S. households generally. *Id.* at 31–32. And by limiting their analysis of gasoline automobiles to households that *also own* electric automobiles, *id.* at 24–25, the authors skewed their results. How electric automobile owners drive a *secondary* gasoline automobile tells us very little about the how the vast majority of Americans—who use a gasoline automobile as their *primary* mode of transportation—drive. The other studies DOE cites that arguably sup-

port its position are based on similarly biased data sets limited to California households that own electric automobiles.⁴

On the other hand, studies based on randomized, national data sets uniformly show that electric automobiles are on average driven less than conventional automobiles. Using “nationally representative data from the U.S. Department of Transportation’s *National Household Travel Survey*” Professor Lucas Davis at University of California Berkeley found that gasoline and diesel automobiles were driven an average of 10,200 miles per year, compared to 6,300 miles for electric automobiles—approximately 38% less. L.W. Davis, *How Much are Electric Vehicles Driven?*, 26 *Applied Econ. Letters* 1497, 1497, 1498–99, tbl. 1 (2019), <https://doi.org/10.1080/13504851.2019.1582847>. Examining national used automobile listings, researchers from George Washington University found that conventional automobiles were driven an average of 11,642 miles per year, compared to 7,165 miles for electric automo-

⁴ See D. Chakraborty et al., *Integrating Plug-in Electric Vehicles (PEVs) Into Household Fleets-factors Influencing Miles Traveled by PEV Owners in California*, 26 *Travel Behaviour & Soc’y* 67 (2022), <https://doi.org/10.1016/j.tbs.2021.09.004>; W. Jia & T. Donna Chen, *Beyond Adoption: Examining Electric Vehicle Miles Traveled in Households with Zero-Emission Vehicles*, 2676 *Transp. Rsch. Rec.: J. Transp. Rsch. Bd.* 642 (2022), <https://doi.org/10.1177/03611981221082536>.

biles—again, approximately 38% less. L. Zhao et al., *Quantifying Electric Vehicle Mileage in the United States*, 7 Joule 1, 4 (2023), <https://doi.org/10.1016/j.joule.2023.09.015>.⁵ These nationally representative studies—which DOE cites without substantive discussion, 89 Fed. Reg. at 22,053 nn.25–26, Add.13—demonstrate that electric automobiles are driven substantially fewer miles annually than gasoline automobiles.

DOE criticized an *iSeeCars.com* study put forward by commenters, arguing that it was “biased toward examining older vehicles with lower [electric vehicle] ranges because it explored used [electric-vehicle] listings from 2016–2022.” *Id.* at 22,053, Add.13. But an updated study from the same group examined 1.3 million three-year-old automobiles sold between November 2022 and April 2023 and found the same: gasoline

⁵ DOE cites two other studies that also found electric automobiles are driven less than gasoline automobiles. Fiona Burlig et al., *Low Energy: Estimating Electric Vehicle Electricity Use*, 111 AEA Papers & Proceedings 430, 434 (2021), <https://www.aeaweb.org/articles?id=10.1257/pandp.20211088> (using electricity meter data from California households to estimate electric automobiles were driven 6,700 miles annually, which “is substantially lower than [vehicle-miles traveled] in gasoline-powered cars”); Luke Rush et al., *Vehicle Residual Value Analysis by Powertrain Type and Impacts on Total Cost of Ownership*, ANL/ESD-22/2 Rev. 1, at 6, tbl. 1 (May 2022), <https://doi.org/10.2172/1876197> (using sales data from a national database to conclude electric automobiles were driven an average of 8,838 miles per year, compared to 9,011 miles per year for gasoline automobiles).

automobiles were driven, on average, 12,813 miles per year, while electric automobiles were driven only 10,256 miles—approximately 20% less. iSeeCars, *Electric Automobiles are Driven the Least While Costing the Most* (Apr. 30, 2024), <https://perma.cc/Z4RE-QCQX>.

On the whole, the evidence is overwhelmingly one-sided: electric automobiles are driven substantially less—20% to 40% less—than gasoline automobiles. This makes sense, given the shorter ranges and longer refueling times of electric automobiles, as well as the difficulty in locating operable charging stations, as Secretary Granholm knows from personal experience. See Letter to Jennifer Granholm, Sec’y, DOE, from James Comer, Chairman, H. Comm. on Oversight and Accountability (Sept. 26, 2023), <https://perma.cc/H5YQ-HRM6>.

But DOE ignores this evidence. Instead, on the basis of a couple of biased reports, the agency “maintains that current [electric vehicles] are ... capable of comparable performance and range to conventional counterparts,” 89 Fed. Reg. at 22,053, Add.13, a conclusion that “runs counter to the evidence,” *State Farm*, 463 U.S. at 43.

V. DOE’S EXPLANATION FOR THE TWO-CYCLE TEST PROCEDURE IS ARBITRARY AND CAPRICIOUS

DOE initially claimed that the two-cycle test procedure “provides an accurate measure of the electrical energy efficiency of the relevant [electric vehicle] during typical use.” 88 Fed. Reg. at 21,527, App.10. But the two-cycle test vastly overstates real-world fuel economy. 87 Fed. Reg. at 25,720. So, DOE now says that the two-cycle test procedure “is reasonable and appropriate” “to ensure a level playing field.” 89 Fed. Reg. at 22,044, Add.4.

This explanation fails. Although this test procedure is inaccurate for all automobiles, it is *more* inaccurate for electric automobiles. The two-cycle test is unrepresentative because, among other things, it was developed for 1975 automobiles and is run at warm temperatures, with no heat or air conditioning on. App.66–68, 99. That biases the test in favor of electric automobiles. Gasoline automobiles can use waste heat to operate accessories (e.g., the heater), but electric automobiles need to draw power from the battery, which reduces their energy efficiency. App.68. Further, gasoline automobiles are barely affected by changes in temperature, whereas a battery’s chemical reactions slow considerably at lower temperatures, reducing power output. App.99–100. Turning on the

heat in commuting conditions requires even more battery power, and can drop electric-automobile efficiency by 50%. App.100. That’s why, when determining values for fuel economy labels, EPA multiplies the tested efficiency of an electric automobile by 0.7—indicating the two-cycle test overstates electric automobile fuel economy by 30%—a larger adjustment than ordinarily applies to a gasoline automobile under EPA’s labeling regulations. 40 C.F.R. § 600.210-12(a)(2), (d)(3)(ii).

But even those EPA adjustments do not go far enough: a comprehensive 2023 study concluded that, while real-world highway fuel economy of gasoline and diesel automobiles was in “good agreement with the highway fuel economy label value,” the real-world highway fuel economy of battery electric automobiles was significantly lower than the label value. Gregory Pannone & Dave VanderWerp, *Comparison of On-Road Highway Fuel Economy and All-Electric Range to Label Values: Are the Current Label Procedures Appropriate for Electric Vehicles?*, SAE Tech. Paper 2023-01-0349, at 3 (2023), <https://doi.org/10.4271/2023-01-0349> (cited by App.93).

DOE therefore fails to reasonably explain why the two-cycle test procedure “levels” the playing field. Rather than level the playing field, the test is biased in favor of electric automobiles.

VI. VACATUR IS THE PROPER REMEDY

When an agency has violated the APA’s procedural requirements, exceeded its authority, or acted arbitrarily in issuing a rule, the appropriate remedy is vacatur. *Iowa League of Cities*, 711 F.3d at 875; *United States ex. rel. O’Keefe v. McDonnell Douglas Corp.*, 132 F.3d 1252, 1257 (8th Cir. 1998). Accordingly, Petitioners request that this Court vacate DOE’s petroleum-equivalency determination for model years 2024 and later and order DOE to promulgate a new determination for these model years after following the APA’s notice-and-comment procedure, in accordance with the law.

CONCLUSION

For the foregoing reasons, Petitioners respectfully request that the Court grant their petition for review and vacate the rule.

Respectfully submitted,

/s/ Michael Buschbacher

MICHAEL BUSCHBACHER

Counsel of Record

R. TRENT MCCOTTER

JAMES R. CONDE

LAURA B. RUPPALT

BOYDEN GRAY PLLC

801 17th Street NW, #350

Washington, DC 20006

(202) 955-0620

mbuschbacher@boydengray.com

*Counsel for the American Free
Enterprise Chamber of
Commerce*

TIM GRIFFIN

Arkansas Attorney General

/s/ Nicholas J. Bronni

NICHOLAS J. BRONNI

Solicitor General

DYLAN L. JACOBS

Deputy Solicitor General

Office of the Arkansas Attorney
General

323 Center Street, Suite 200

Little Rock, AR 72201

(501) 682-6302

Nicholas.Bronni

@ArkansasAG.gov

Counsel for State of Arkansas

BRENNA BIRD

Iowa Attorney General

/s/ Eric H. Wessan

ERIC H. WESSAN

Solicitor General

PATRICK VALENCIA

Deputy Solicitor General

1305 E. Walnut Street

Des Moines, Iowa 50319

(515) 823-9117

(515) 281-4209 (fax)

eric.wessan@ag.iowa.gov

Counsel for State of Iowa

ASHLEY MOODY

Florida Attorney General

/s/ Henry C. Whitaker

HENRY C. WHITAKER

Solicitor General

Florida Attorney General's Office

The Capitol, Pl-01

Tallahassee, Florida 32399-1050

(850) 414-3300

(850) 410-2672 (fax)

henry.whitaker

@myfloridalegal.com

Counsel for State of Florida

RAÚL R. LABRADOR
Idaho Attorney General

/s/ Joshua N. Turner

JOSHUA N. TURNER
*Chief of Constitutional
Litigation and Policy*
ALAN M. HURST
Solicitor General
Office of the Idaho
Attorney General
P.O. Box 83720
Boise, Idaho 83720
(208) 334-2400
Josh.Turner@ag.idaho.gov
Alan.Hurst@ag.idaho.gov

Counsel for State of Idaho

KRIS W. KOBACH
Kansas Attorney General

/s/ Dwight Carswell

DWIGHT CARSWELL #25111
Deputy Solicitor General
Office of the Attorney
General
120 S.W. 10th Avenue
Topeka, Kansas 66612
Dwight.Carswell@ag.ks.gov

Counsel for State of Kansas

LYNN FITCH
Mississippi Attorney General

/s/ Justin L. Matheny

JUSTIN L. MATHENY
Deputy Solicitor General
Mississippi Attorney General's
Office
P.O. Box 220
Jackson, MS 39205
(601) 359-3680
justin.matheny@ago.ms.gov

Counsel for State of Mississippi

ANDREW T. BAILEY
Missouri Attorney General

/s/ Joshua M. Divine

JOSHUA M. DIVINE, 69875MO
Solicitor General
Office of the Attorney General
207 West High Street
Jefferson City, MO 65101
Phone: (573) 751-8870
Josh.Divine@ago.mo.gov

Counsel for State of Missouri

AUSTIN KNUDSEN
Montana Attorney General

/s/ Christian B. Corrigan
CHRISTIAN B. CORRIGAN
Solicitor General
PETER M. TORSTENSEN, JR.
Deputy Solicitor General
Montana Department of Justice
215 North Sanders
P.O. Box 201401
Helena, Montana 59620-1401
(406) 444-2026
christian.corrigan@mt.gov

Counsel for State of Montana

MICHAEL T. HILGERS
Nebraska Attorney General

/s/ Grant D. Strobl
GRANT D. STROBL
Assistant Solicitor General
Office of the Attorney General
of Nebraska
2115 State Capitol
Lincoln, NE 68509
(402) 471-2683
Grant.Strobl@nebraska.gov

Counsel for State of Nebraska

DAVE YOST
Ohio Attorney General

/s/ T. Elliot Gaiser
T. ELLIOT GAISER
Solicitor General
MATHURA J. SRIDHARAN
Deputy Solicitor General
Office of the Attorney General
365 East Broad Street
Columbus, Ohio 43215
Phone: (614) 466-8980
thomas.gaiser@ohioago.gov

Counsel for State of Ohio

GENTNER DRUMMOND
Oklahoma Attorney General

/s/ Garry M. Gaskins, II
GARRY M. GASKINS, II
Solicitor General
JENNIFER L. LEWIS
Deputy Attorney General
Office of the Attorney General of
Oklahoma
313 NE Twenty-first Street
Oklahoma City, OK 73105
(405) 521-3921
garry.gaskins@oag.ok.gov
jennifer.lewis@oag.ok.gov

Counsel for State of Oklahoma

KEN PAXTON
Texas Attorney General

BRENT WEBSTER
First Assistant Attorney General
JAMES LLOYD
*Deputy Attorney General for Civil
Litigation*
KELLIE E. BILLINGS-RAY
*Chief, Environmental Protection
Division*

/s/ Wesley S. Williams
WESLEY S. WILLIAMS
Assistant Attorney General
Texas Bar No. 24108009
Office of the Attorney General of
Texas
Environmental Protection
Division
P.O. Box 12548, MC-066
Austin, Texas 78711-2548
(512) 463-2012
Fax: (512) 320-0911
Wesley.Williams@oag.texas.gov

Counsel for State of Texas

CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(g)(1) this brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B), because the brief contains 12,289 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f).

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May 29, 2024

/s/ Michael Buschbacher
Michael Buschbacher

CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who have consented to electronic service are being served today with a copy of this document via the Court's CM/ECF. All parties in this case are represented by counsel consenting to electronic service.

May 29, 2024

/s/ Michael Buschbacher
Michael Buschbacher